CLAIMS:

1. Apparatus for transporting particulate material comprising:

a vacuum system including an air pump having a vacuum side and an outlet side, an inlet opening for receiving an inlet stream of air generated by the vacuum side of the pump and containing the particulate material to be transported, a separation system for separating the particulate material from the inlet air stream for passage of the air stream through the pump and an outlet duct for receiving the air stream from the outlet side of the pump and for transporting the particulate material from the separation system to an outlet location;

an inlet nozzle assembly movable at an inlet location for collecting the particulate materials to be transported from the inlet location by the inlet air stream;

and a flexible hose connected between the inlet nozzle assembly and the inlet opening of the vacuum system and arranged to provide sufficient flexibility to allow movement of the inlet nozzle assembly to required locations at the inlet location;

the flexible hose having at least three tubular rigid metal portions and at least three tubular flexible polymeric portions with the rigid portions and the flexible portions being connected end to end in a row alternately so that each rigid portion is connected at its ends to respective ones of two flexible portions and each flexible portion is connected at its ends to respective ones of two rigid portions.

2. The apparatus according to claim 1 wherein each flexible portion is connected at its end to a rigid portion by a hose clamp which clamps an end surrounding piece of the flexible portion onto the end of the rigid portion.

3. The apparatus according to claim 1 wherein the hose is formed substantially wholly along its length from the nozzle assembly to the inlet opening by alternating flexible pieces and rigid pieces.

4. The apparatus according to claim 1 wherein all the rigid pieces are of substantially equal length.

5. The apparatus according to claim 1 wherein both the rigid pieces and the flexible pieces are substantially of equal length.

6. The apparatus according to claim 1 wherein each rigid and each flexible piece is at least 12 inches in length.

7. The apparatus according to claim 1 wherein no rigid nor flexible piece has a length greater than 24 inches.

8. The apparatus according to claim 1 wherein the hose includes two manually graspable handles with one on each of the first two rigid pieces.

9. The apparatus according to claim 1 wherein the hose includes air flow control opening on one of the rigid pieces located adjacent to the inlet opening.

10. The apparatus according to claim 1 wherein the hose and a mouth of the hose are cylindrical and wherein the nozzle assembly forms a slot.

11. The apparatus according to claim 1 wherein each of the flexible pieces is formed from a length of a transversely corrugated hose.

12. The apparatus according to claim 1 wherein there is provided a transport cart for moving the nozzle and the pipe relative to the vacuum source across a surface from which the material is to be removed by the nozzle while the vacuum source remains at a fixed location; the cart including: a frame; ground wheels for supporting the frame for movement across the surface; a motor for driving one or more of the ground wheels; a support on the frame for receiving an operator supported on the frame for movement therewith; and a manually operable control arrangement carried on the frame and operable by the operator while the operator is carried on the frame, the control arrangement being operable to control forward and

rearward movement of the cart and steering movements of the cart to each side for guiding the cart and the nozzle over the surface.

13. The apparatus according to Claim 12 wherein the cart has four wheels each of which is driven.

14. The apparatus according to Claim 12 wherein the cart has two wheels on each side where the wheels on one side are commonly driven by a first motor and the wheels on the other side are commonly driven by a second motor such that steering movement of the cart is controlled by differential forward and rearward driving movement of the wheels on the two sides.

15. The apparatus according to Claim 12 wherein the manually operable control arrangement comprises a pair of switches each for controlling forward and reverse movement of a respective one of the first and second motors.

16. The apparatus according to Claim 12 wherein the support for the operator comprises a pair of foot pads each for receiving the operator standing on the cart.

17. The apparatus according to Claim 12 wherein the manually operable control arrangement comprises an upstanding handle bar at a front of the cart for grasping by the standing operator.

18. The apparatus according to Claim 12 wherein the frame defines a channel for the pipe longitudinally of the frame such that a rear end of the pipe is located at a rear end of the frame and the nozzle is carried at a forward end of the pipe in front of the frame.

19. The apparatus according to Claim 12 wherein the frame defines a pair of foot pads each on a respective side of the pipe on which the operator can stand.

20. The apparatus according to Claim 12 wherein the frame carries a pair of motors each defining an axis of a drive shaft extending across the frame underneath the channel for the pipe.

21. The apparatus according to Claim 12 wherein each motor drives a sprocket and chain for driving one of the wheels spaced along the frame from the motor, the frame having a channel on each side of the pipe channel for receiving the chain.

22. The apparatus according to Claim 21 wherein the motors are electric.

23. The apparatus according to Claim 21 wherein the pipe extends along the cart from a rear end at a rear of the cart to the nozzle at the front end and wherein the motors are arranged underneath the pipe one in advance of the other.

24. Apparatus for transporting particulate material comprising:

a vacuum system including an air pump having a vacuum side and an outlet side, an inlet opening for receiving an inlet stream of air generated by the vacuum side of the pump and containing the particulate material to be transported, a separation system for separating the particulate material from the inlet air stream for passage of the air stream through the pump and an outlet duct for receiving the air stream from the outlet side of the pump and for transporting the particulate material from the separation system to an outlet location;

an inlet nozzle assembly movable at an inlet location for collecting the particulate materials to be transported from the inlet location by the inlet air stream;

a first hose piece connected to the inlet opening;

a second hose piece formed at least partly of flexible material connected between the inlet nozzle assembly and the inlet opening of the vacuum

system and arranged to provide sufficient flexibility to allow movement of the inlet nozzle assembly to required locations at the inlet location;

wherein the hose includes air flow control opening on second hose piece located at a position therealong adjacent to the first hose piece for controlling entry into the first hose piece of additional exterior air.

25. A method of transporting particulate material from a storage bin comprising:

providing a vacuum system including an air pump having a vacuum side and an outlet side, an inlet opening for receiving an inlet stream of air generated by the vacuum side of the pump and containing the particulate material to be transported, a separation system for separating the particulate material from the inlet air stream for passage of the air stream through the pump and an outlet duct for receiving the air stream from the outlet side of the pump and for transporting the particulate material from the separation system to an outlet location;

moving an inlet nozzle assembly within the storage bin for collecting the particulate materials by the inlet air stream;

and providing a flexible hose connected between the inlet nozzle assembly and the inlet opening of the vacuum system and arranged to provide sufficient flexibility to allow the movement of the inlet nozzle assembly to required locations within the bin;

the flexible hose being provided with sufficient flexibility by being formed by at least three tubular rigid metal portions and at least three tubular flexible polymeric portions with the rigid portions and the flexible portions being connected end to end in a row alternately so that each rigid portion is connected at its ends to respective ones of two flexible portions and each flexible portion is connected at its ends to respective ones of two rigid portions.